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Assam and Bathang, and that the convolution of these mountains does not in any way interfere with communication between India and China.

31st May, 1870.

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## 2. *The Irawady and its Sources.* By Dr. J. ANDERSON.

[EXTRACTS.]

I AM no disciple of the theory that the Sanpo is the Irawady, and, in view of Turner's account of the Sanpo and the accurate observations made by Captain Montgomery's pundits, I cannot see how it is possible, at the present day, that any one could be found prepared to re-advocate its claims. It appears to me, however, that Klaproth's hypothesis has done good service to the Irawady, in so far as it excited an interest in the discovery of its sources, and gave it that importance, to which it is entitled by the enormous body of water which it carries to the sea. The very circumstance that so many able geographers have been found willing to pin their faith to the theory in question seems to indicate that there must be some foundation for the opinion that the main stream has its source a long way to the north of the Khamti Mountains. This, however, only by the way, for such evidence is of little practical value.

Wilcox gained his first view of the supposed main stream of the Irawady from the hills which separate the Namlang, one of the affluents of the eastern branch of the Brahmaputra, from the plains of the Upper Irawady. The stream winds in a large plain, spotted with light green patches of cultivation and low grass jungle. On reaching its banks he states that he and Lieutenant Burlton were surprised to find but a small river, smaller even than they anticipated, *though aware of the proximity of its sources*. It was not more than 80 yards broad, and still fordable, though considerably swollen by the melting snows; the bed was of rounded stones, and, both above and below where they stood, they could see numerous shallow rapids, similar to those on the Dihing.

As to the general question of the origin of the Irawady, he proceeds to say he felt perfectly satisfied, *from the moment he made inquiries at Sudiya*, that Klaproth's theory that the waters of the Sanpo find an outlet through the channel of the Irawady was untenable; and now that he stood on the edge of the clear stream, which he concluded to be the source of the great river, he could not help exulting at the successful termination of his toils and fatigues.

On the east and west of where they stood, about lat. 27° 26', were peaks heaped on one another in the utmost irregularity of height

and form, and at all distances. Their guide pointed out the direction of the two larger branches uniting to form the eastern branch of the Irawady.

The elevation above the sea was found to be 1855 feet, and, on the theory that Bhamo was 500 feet above the sea, which would be equivalent to a fall of the river of 8 inches each mile, there would remain 1300 feet of fall in the 350 miles between their position and Bhamo, which he believed sufficiently accounted for the greater part of that distance being *unnavigable, excepting for small canoes*.

This eastern branch, which no European eye has ever seen and about which Wilcox professed he was unable to obtain any positive information, he calls the Suhmai Kha, Pougmai or Linmai Kha. It was described to him as rising in the northern mountains at no great distance eastwards from the *heads of the Irawady*, and the objections to assigning it a very distant course are:—first, its want of magnitude; second, the direction of the high range, which would require it to break through the most elevated ground in that quarter; and lastly, the want of room, from the presence to the east of it of the Salween.

These are all the facts which Wilcox, from his own observation and research, brought to bear on the question of the sources of this river. He may have contributed to disprove M. Klapproth's theory, but he certainly did not discover the sources of the Irawady, as he seems to have thought.

We will now examine the estimate he had formed of the river whose sources he was thus locating, but whose main stream had never been seen by him; and, in connection with this subject, he asks himself the pertinent question—"What is the magnitude of the Irawady compared with other rivers close at hand?" I shall give his own answer in nearly his own words; and with it before us we shall be able to judge whether his knowledge was sufficiently accurate to give this opinion on its probable source much weight.

He reproduces Buchanan Hamilton's statement that during the dry months of January, February, March and April, the waters of the Irawady subside into a stream that is barely navigable; and, founding his deductions as to the magnitude of the river on this description, which is certainly apt to mislead one who had never visited the main stream, it is not to be wondered that he limited its source to the southern face of the mountains bounding the Khamti plain to the north, in lat. 28°.

We shall now turn to the accounts of Hannay, Bayfield, and Griffith, to give some idea of the true character of the Irawady about 60 miles below where it receives the branch Wilcox visited.

Colonel Hannay describes the Irawady, in lat.  $24^{\circ} 56' 53''$  at the mouth of the Mogoung stream as still a fine river, flowing in a reach from the eastward half a mile broad at the rate of two miles an hour, and with a depth varying from three fathoms in the centre to two at the edge; and that it is not unnavigable to large boats is evidenced by the fact stated incidentally by Hannay that at the town of Tsenbo, 10 miles below the mouth of the Mogoung River, they had to change their boats for others of a smaller description better adapted for the navigation of a small tortuous stream like that of Mogoung. Even these, however, were not very small; for Colonel Hannay's required twenty-five men to paddle it.

In speaking of the first defile below Tsenbo through which they had taken their large boats, he describes it as the most dangerous part of the Irawady,—which I can fully verify from personal observation.

This portion of the river commences a few miles above Bhamo, and stretches to within seven or eight miles of Tsenbo. Between these two points it flows under high wooded banks formed by two parallel ranges. At the lower approach to the defile the channel is as much as 1000 yards broad; but as we proceed up it gradually narrows to 500, 200, 100, and even to 50 yards, according as the two ranges approach each other, again increasing in breadth as they recede, till at last below Tsenbo it spreads out again into a noble river.

Griffith's own account of the Irawady above Bhamo is, that it keeps up its magnificent character, as far as he went, to the mouth of the Mogoung River, where it is 900 to 1000 yards across, and he describes the appearance of its vast sheet of water as really grand. He observes that the general characters of the Irawady are very different from the Ganges and Brahmaputra, its waters being much more confined to one bed and comparatively seldom spread out. Generally speaking, it is deep, and the stream is not violent; and he states, what experience has proved to be perfectly accurate, that it affords every facility for navigation, although in one or two places troublesome shallows are met with. In the first defile, the channel is occasionally impeded by rocks, but it is only in this part of the river that the navigation is attended with danger.

Further, in speaking of the tributaries of the Irawady between Mogoung and Ava, he remarks that they are exceedingly small, which tends to increase the astonishment with which one regards this magnificent river.

He hazards the opinion that its source will probably be found to be the Suhmai Kha, and points out the fact that the great body

of water comes from the eastward from between the Mogoung River and Bor Khamti, in which country Wilcox visited the Irawady where it was found to be of no great size. No considerable branch finds its way from the westward, neither are the hills which intervene between these points of such height as to afford large supplies of water. On the whole, he thought it probable that the Irawady is an outlet for some great river which drains an extensive tract of country; for it appeared to him that if all its waters are poured in by mountain streams, an expanse of country extensive beyond all analogy will be required for the supply of such a vast body of water.

I attach great weight to this opinion; for it was formed by Griffiths immediately after his visit to the Brahmaputra, and because he was a man of thoroughly scientific habits of thought, *très instruit, très zélé, et fort bon observateur*, as Mirbel observes.

Dr. Williams, in his book entitled 'Through Burmah to Western China,' gives it as his opinion that a river-steamer of proper construction would have no difficulty in making her way to the Tapeng and for many miles beyond.

My comment on this is that we proceeded to Bhamo in a large steamer drawing 4 feet of water, and experienced no difficulty in the navigation, although the captain and all the crew were Burmans, to whom the river above Mandalay was entirely new. This too happened in one of the months (January) in which Buchanan Hamilton stated the river to be hardly navigable by native boats.

While at Bhamo I took the opportunity to make what I can only characterise as a rush up the first defile. Our visit was necessarily a hurried one, as our leader, Major Sladen, was in daily expectation of being able to make an immediate advance; so that, if we had gone in for a thorough investigation of the river above Bhamo, we should have certainly seriously interfered with the progress of the expedition. My visit, however, sufficed to convince me that the Tapeng makes hardly any sensible difference in the general appearance of the volume of this great river.

The Irawady at the beginning of the first defile, about five miles above Bhamo, is about 1000 yards across, and its course is defined by low wooded hills which run close to its banks. About two miles farther on, the channel narrows to 500 yards, and the hills become even closer and hang more abruptly over the stream than before, and, about another mile beyond, a higher range of hills from the south-west comes in behind the former one, and both terminate on the bank as two headlands. At this point a ridge of rocks runs half across the bed, and at this season (February) they are 8 feet above

the water; but the river is so broad and deep that I find myself speculating, in my notes made on the spot, on the course a steamer would follow in passing them.

The hills still continue on both sides, but they are highest to the west; and as we proceed for 4 or 5 miles the number of rocky points running out into the stream increases; and opposite to the village of Pivaw, about 20 miles above Bhamo, on the left bank, the channel has narrowed to about 150 yards, and here the first so-called rapids occur. The bank on which the village stands is about 80 feet high, and the country inland is undulating and runs up to low ranges of hills a few miles to the north.

Leaving Pivaw, we proceeded about 8 miles farther up the defile, or Kyoukdweng, as it is called by the Burmese, still preserving the high wooded banks on either side.

After we had gone about 3 miles above this, we came to a reach in which the river flows very sluggishly between two high conical hills, which so close in upon it that one is puzzled to detect any outlet. The quiet motion of the water and its deep olive-black are suggestive of great depth. The breadth of this lake-like reach is about 250 yards and its length about  $1\frac{1}{2}$  mile; and, passing on, we find it abruptly closing in at its northern end, and its channel broken up by numerous rocks, which jut out boldly on either side into the stream, and in many cases approach each other so closely that the channel is reduced to 50 or 60 yards. The height of these rocks averages 30 feet; but many of them are not more than 15 to 20 feet. The current, although strong, did not interfere much with our progress.

There is a small isolated rock on the right side of the channel, capped by a pagoda, and another little promontory farther on with a similar structure. The first appears to be of great age, and its presence on this rocky island, well into the middle of the stream and not higher, I should think, than 45 feet above it, gives us some indication as to the limit of the rise of the river; for the pagoda could not withstand the power of the current. It must be borne in mind, however, that the Irawady had not reached its lowest when I visited this spot.

This rocky reach stretches about a mile in a N.N.W. direction, and terminates abruptly above in an elbow from which another reach stretches off in a E.N.E. course, with a clear channel overhung by the precipitous but grassy sides of high hills.

The body of water which flows round this corner during the rains must be very great, and its velocity and power tremendous; for all the rocks (greenstone) subjected to its influence are rounded and

shine with an almost metallic glaze, produced doubtless by the attrition of the flood.

It should be remembered that two other defiles occur on the Irawady, one immediately below Bhamo and the other about 40 miles above Mandalay; others may be said to exist below Thayetmyo, and at Prome, where the course of the river is defined by high hills. Throughout the whole of these the river is of necessity restricted to a well-defined channel, and its breadth depends entirely on the proximity or remoteness of the hills to each other; so [that its breadth is no indication whatever as to the body of water which passes through these channels, though, from the mere fact that the Irawady was contracted at one place to 400 yards, Wilcox considered himself warranted to doubt the position which had been claimed for it by Buchanan Hamilton.

With these facts before us, we are prepared to examine the honour which Wilcox claimed for himself that he had discovered the sources of the Irawady.

After a careful consideration of all the statements advanced by him in his account of the Survey of Assam and the neighbouring countries, I cannot avoid thinking that he came with a biassed judgment to the investigation of the sources of the Irawady; for he states that he felt perfectly satisfied as to the origin of the river before he left Sudiya. But, from the internal evidence of his paper, it is evident that he knew nothing of the main stream, and had never seen it. We are therefore fairly entitled to submit the evidence which he adduces for restricting its sources to the Khamti Mountains, to a rigid criticism. But, to appreciate his position, it must be borne in mind that he had set himself the task to demolish M. Klaproth, and no one had better facilities and information for doing so than this able explorer and geographer, and, to my mind, he was quite successful in his task; but, in carefully reviewing his description of the question, it appears that, in his desire to establish his position, he was led unwittingly to depreciate the importance of the Irawady, and to give it a restricted distribution at utter variance with its magnitude.

The error was a likely one; for his whole acquaintance with the river was a few hours' observation of one of its streams between the 27th and 28th parallels of north latitude, to the east of Assam, and what he learned of it beyond the spot on which he stood was derived solely from Khamti Shans, who were, according to his own statement, little given to travel, and from Singphos from the eastward of Assam. He adduced no proofs, however, that the latter had ever been to the eastward of the eastern branch of the

Irawady, which they made two days' journey above the Mogoung river, and, according to his own account, the former knew nothing of the river beyond the branch on which the villages were placed. Yet, notwithstanding all this and the fact that the Singphos generally from the east of the western branch had informed him that the eastern one was the larger of the two, he adhered to the information which he had received at Sudiya that the western and smallest branch was the source of the river, and this on the authority of Khamti Shans, who knew nothing of the Irawady beyond their own river.

A glance at his description of the stream and of the weather during his visit will be sufficient to show that the only light he threw on the sources of the Irawady was to indicate that the weight of evidence pointed in the direction of the eastern branch, as the great channel from whence that splendid river derives its supply from the highlands of Thibet, between the Yang-tsze Kiang and the headwaters of the Cambodia and Salween, and the two eastern affluents of the Brahmaputra (Sanpo), the Dihong and Brahmakund.

He says he was surprised to find but a small river, smaller even than he had anticipated, though aware of the proximity of its sources—a statement which sounds like a foregone conclusion; but he goes on to describe it as 80 yards broad, but still fordable, although considerably swollen by the melting snows. That this, however, was not the only cause of the rise of the river such as he describes it, is evident from the frequent reference he makes to the very heavy rains he had experienced on the last eight days of his march, but which never occurred to him as the *vera causa* of the flood.

Now with these facts before us, that the river during the height of a flood caused by the heavy rains and the melting snows was only 80 yards broad and fordable, the inference is forced upon us that it could be little more than a mountain rivulet during the dry weather.

Such, then, was Wilcox's supposed source of a river which 150 miles farther down measured half a mile in breadth, with an average depth of from 2 to 3 fathoms, without receiving any notable stream on the way that would account for the unprecedented difference between the two points.

The conclusion, therefore, we arrive at is that the eastern branch, as described by him, was only a small affluent of the main stream which flows down from the north-east, as described by my informant, and that the sources of the river in all probability lie considerably to the north of the so-called Khamti range of mountains, and that it



thus becomes one of the Thibetan rivers; it becomes probable that some of the Thibetan rivers flowing down from the north in the direction of the Irawady may be its upper sources, while the others may be branches of the Yang-tsze Kiang, and that the Irawady drains part of that area between Lassa and Bathang which has hitherto been apportioned to the Cambodia and Salween.

D'Anville was the first to connect the Thibetan rivers with the Cambodia and Salween, a course which was forced upon him from the circumstance that he believed the Sanpo to be the Irawady. Bringing the former river in the way he did to the west of Yunan, he considered he had provided an ample supply of water to account for the volume of the latter, and he had, therefore, to look for some other outlet for the drainage of that area of Thibet between Lassa and Bathang, to the north of the supposed course of his Sanpo, and he hit upon the Salween and Cambodia as affording the means, and the unnatural and extraordinary course which he gave then has been perpetuated ever since in the maps of Klaproth, Dalrymple, and Berghaus, without a tittle of evidence in its favour. Now that it is proved, almost to a demonstration, that the Sanpo flows in its natural course to the Brahmaputra, it is to be hoped that the Irawady will not any longer be denied its due, as a river far surpassing the Salween and Cambodia in its northern distribution.

In conclusion, I may state that these remarks have been suggested by a note of Mr. Cooper's in the 'Proceedings of the Royal Geographical Society' for June, 1869, in which he hazards the remarkable supposition that the Sanpo, as well as another large river to the east of it, falls into a river called the Yarlong, which he supposes may be either the Brahmaputra or the Irawady; an amount of uncertainty which affords an ample field for conjecture, but certainly throws little light on the subject.

The PRESIDENT having expressed the thanks of the Society to the authors of the papers,

Sir RUTHERFORD ALCOCK said there were two very important subjects broached in the papers; first, a question affecting commercial interests, which were largely connected with those of geography, and next, a purely scientific and geographical question. If a direct, practicable route could be discovered from one of the most populous and wealthy of the provinces of China, Sze-Chuen, to Assam and the Valley of the Ganges, immense wealth would pour in from each country to the other, and a line of commerce would be established of inestimable value to the whole commercial world. Unfortunately, it appeared that there were very high altitudes to be crossed, followed by corresponding depression of spirits. The Abbé Huc had some bitter experience of the difficulties to be overcome when he forced his way to Lassa, and the graphic account he had given of the hardships and miseries certainly produced the impression that it was very doubtful whether there could be a practicable route that could be used for the purposes of commerce. Still the problem was one of

such vast importance that it well became the Geographical Society to encourage every effort to solve it. When Mr. Cooper was about to undertake his journey he (Sir R. Alcock) endeavoured to dissuade him from setting out, because he felt perfectly certain that, in the present political state of Thibet and China, no foreigner had a chance of forcing his way through. Even if Mr. Cooper could so disguise himself as to pass for a Thibetan, and could speak both Chinese and Thibetan perfectly, he would still be unable to get through Thibet at present. The Lamas, who are more or less under the control of the Chinese Government, look with the most extreme jealousy and hostility on any attempt of the White Face to penetrate into their country. They believe that the people who conquered India would also appropriate Thibet, and that the only means of safety for them, for their religion, and for their country, is to keep the foreigners out. The Chinese Government, certainly, had opened China to a great extent, but only under considerable pressure, and it was not very anxious for Europeans to find their way through Thibet. Although he thought that for the present it would be impossible to establish a practicable route, yet Mr. Cooper might obtain a great deal of valuable information by following the frontier and pushing here and there wherever he had an opportunity, so that in another generation, if not in this, the great object might be accomplished. It was possible, if the connection of the three rivers were traced, that a way might be found along one of their courses into Assam and the valley of the Ganges, and whoever discovered such a route would render more effectual service to the interests of commerce than he who discovered the sources of the Nile.

Major SLADEN said the expedition under his charge in 1868 reached the town of Bhamo, on the Irawady, but the information with regard to the sources of the river which was obtainable there was (as stated by Dr. Anderson) not worthy of record. Dr. Anderson's paper was nevertheless a valuable contribution in many respects, as it massed together a large quantity of information which would certainly assist future exploration. He felt sure that if a real attempt to discover the sources of the river were made, it must be successful. It would be an easy matter to send an expedition from Bhamo to the sources, and the expense and danger would be very little, as compared with the results which would be accomplished. During a residence of several years at Mandalay he had made some observations on the periodical inundations, an account of which he would beg leave to read to the meeting:—

"The Irawady is subject to annual periodical inundations, which have hitherto been accounted for, as having their origin in two distinct causes:— 1. The melting of the snows in the Himalayas. 2. The periodical rains (or monsoons) which set in about June, and continue till October of each year. Now the peculiarity above referred to, as regards these inundations, is, so to speak, their strict periodicity; that is to say, their occurrence, or recurrence, at fixed monthly or bimonthly periods. To be more precise, the rise and fall of the river during the period of inundation can be defined, or described, or calculated upon, as occurring within certain fixed periods, which coincide in point of time, with the changes of the moon, or more particularly with the rise and fall of the sea-tides, as they occur, or are affected by the changes of the moon."

Of course it must be borne in mind that these inundations occur several hundred miles beyond the reach of all *apparent* tidal influence, otherwise their periodicity, as affected by the tides, would form no peculiarity at all.

"I am probably not far wrong in stating that the tides in the Irawady are rarely appreciable 100 miles from any of its mouths or estuaries; and yet at Mandalay we are allowed to witness the peculiarity or phenomenon of the inundations several hundred miles inland, and beyond the reach of all known tidal influences, being regulated, as regards time, extent, and duration, by

the same apparently external influences which control the tides everywhere, and more particularly on the eastern coast of the Bay of Bengal.

"My attention was first drawn to this very singular fact by the ordinary conversation of natives, who were accustomed, as a matter of course, to associate the rise and fall of the water, during the period of inundation, with the changes of the moon, or with the precise period of full moon and change, without reference to any particular season or month. For instance, they would say, during any particular period of inundation, '*Oh, the water will rise several feet higher next full-moon;*' or, '*The water is not so high this change of the moon as it was last;*' or '*The water is higher this full-moon than it was the corresponding full-moon of last year.*' When I interrogated them as to facts, and asked, in astonishment, what the moon had to do with the inundations, or with their own calculations as to the period of inundation, they were amused at my ignorance or incredulity, and simply asked me to watch and note down facts then in course of progress and development under my own observation. The result has been, that during two years or seasons of inundation I became a close observer, and convinced myself, beyond all question or doubt, that the inundations did occur or recur, at fixed periods, which coincided, as regards time, extent, and duration, with the changes of the moon, or with the rise and fall of the sea-tides, as they are affected or controlled by the changes of the moon.

"Now, how is this anomaly (if it is one) to be accounted for? Observation proves that the moon does appear to exercise a complete controlling influence over the inundations, so as to make them correspond, as regards time and duration, with the occurrence of the sea-tides at the mouths of the Irawady. And yet the greater portion of the river affected by these inundations, or in which these inundations occur, is removed several hundred miles from all apparent tidal influences!

"I am, perhaps, at present the only European observer who has taken note of this very anomalous peculiarity in the periodical inundations of the Irawady, though instances are not wanting in which my observations have been verified by casual visitors, at Mandalay during the inundation season.

"None of these visitors ever doubted the strict periodicity of the inundations, or rather the coincidence of their recurrence at the time of full moon and change, or at intervals which tallied with the occurrence of the spring tides on the sea-coast.—But no one even ventured upon a solution of the peculiarity on scientific principles.

"The general idea seems to have been that the inundations were influenced, even as far up the river as Mandalay (that is several hundred miles beyond tidal influences), by the damming up, or jamming up of the water, at the several mouths and estuaries of the river, during the period of spring tides. But science has always interposed to falsify such a theory, by the simple fact that running water, with the power of expansion, cannot be forced up an incline so as to rise above its own level.

"Now the difference in level, between the mouth of the Irawady and Mandalay, where the inundations have for the most part been observed, is supposed to be 500 feet; and no one will believe that the river water, with the power of expansion over thousands of square miles of flat country in its lower course, can be forced up so lengthy and continuous an incline, so as just to overflow its bank, along the whole course of retrogression, and thus cause the periodical inundations which I have been trying to describe; but whose periodicity nobody has as yet been able to account for.

"Another theory put forward, by one of my Mandalay visitors, who was at a loss to account otherwise for the strange periodicity of the Irawady inundations, was that the inundations, as a whole, are so vast and extensive in themselves, as to form a small inland sea, or maritime lake, over which the

moon's influence would be felt, to an extent which would account for a periodical rise and subsidence of the water as affected by the moon's changes.

"A more intelligible way of accounting for the recurrence of the inundations, at periods which coincided with the changes of the moon, was, as put forward by another speculative theorist, that *possibly*, at such changes, the rains were more heavy than at other times, and brought an increased volume of water into the main channel of the Irawady, at the same time that the mouths of the river were simultaneously closed or jammed up, by an unusual influx of sea-water during the period of spring tides.

"But I do not pretend myself to put forward or support any of these theories by which to account for what I have described as a peculiarity in the periodical inundation of the Irawady. My object has been to state certain facts which appear to me to come within the scope and pretensions of this learned Society; and to invite inquiry and discussion on a subject which cannot be without scientific interest in its relation to the geography, descriptive and physical, of the far famed but still imperfectly explored waters of the noble Irawady.

EDWARD B. SLADEN."

Mr. SAUNDERS said, although Wilcox did not visit the eastern branch of the head-waters of the Irawady, it could scarcely be doubted that he ascertained for himself that he was upon the main river. There was nothing in his observations that contradicted the idea that the river might receive considerable accessions of water from the eastern branch, or even that the eastern branch might not take its rise to the northward of the Kamti Mountains, but it was not necessary to go far to the north in search of a sufficient source for the eastern branch, especially when the great height of the mountains was taken into account. Until further information was received, we were more warranted in accepting the opinion of Wilcox than that of Dr. Anderson. With regard to Mr. Cooper's statement that Bathang is in Eastern Thibet, it was recorded, on authority which had never before been questioned, that in the year 1775 the country to the westward of the Yalung River was invaded by a Chinese general to put down a rebellion, and that a survey was afterwards instituted, and the frontiers of Sz'chuen were advanced 200 miles to the westward, and beyond the Yang-tze Kiang. Abbé Huc confirmed this statement, when he said that on his journey from Lassa, two days before he arrived at Bathang, he observed upon the top of a mountain, a stone monument built for the purpose of defining the boundary between Thibet and China. When he arrived at Bathang, he found that though the great monastery there was under the direction of an emissary of the Grand Lama, the civil government of the city was in Chinese hands. He believed we should be going back nearly a century if we were to follow Mr. Cooper in drawing the frontiers of Sz'chuen as they were before 1775.

Mr. COOPER believed it was correct to give the boundaries of countries as determined by the extent of the language, the manners, and the races of the country. From Ta-tsieu-loo, which he termed the border town of China, he found a different race, a different language, and a different costume, and therefore he could scarcely believe that that district was a part of China. True, in Chinese maps, from the longitude of Ta-tsieu-loo to the Kin-cha River was included as part of Sz'chuen, but only in the same way as Scotland was included in a map of Great Britain.

Mr. GALTON trusted that Major Sladen would communicate to the Society the precise observations he had made with regard to the inundations of the Irawady.

Major SLADEN said the observations were jotted down in his diary, and in noting down the rise and fall of the waters, he had always found that the time of inundation corresponded with that of the spring tides on the sea-coast. He should be happy to furnish these observations such as they were.

The CHAIRMAN congratulated the Society on the success of the session which was now ended, and the meeting was then adjourned to November.